IN THE DRAWINGS

A replacement sheet for Figure 1 is enclosed. In this replacement sheet, the designations of "Vpp" and "Vpn" have been changed to "Vfp" and "Vfn" to be consistent with the specification.

A replacement sheet for Figure 2 is also enclosed. In this replacement sheet, the vertical line crossing the Vin axis was removed to address a typographical error.

A replacement sheet for Figure 3 is also enclosed. In this replacement sheet, the title has been changed to "Figure 3a" and the designations of "Vpp" and "Vpn" have been changed to "Vfp" and "Vfn" to be consistent with the specification.

A new drawing Figure 3b is also enclosed. This drawing is supported by the specification and illustrates the claimed feature of inserting current-limiting diodes into the NMOS feedback path. No new matter is added.

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REMARKS

Applicant respectfully traverses the rejection of the pending claims over the prior art.

In that regard, Applicant disclosed on, for example, page 6, lines 14 – 21 that either P3 to ground or N3 to VCC in Figure 3a form feedback paths that may be modified to include the current-limiting feature that in turn provides the self-adjusting nature for the disclosed inventive Schmitt triggers. Because either of these feedback paths may be modified, claim 1 was generic as to which feedback path was selected for the modification – it recites a "first feedback path configured to determine one of the voltage thresholds." This feedback path is further limited by "at least one diode coupled to the feedback path such that an on-current through the first feedback path is reduced as a supply voltage for the Schmitt trigger is reduced."

As set forth, for example, on page 7, lines 3 – 18, the at least one diode enables the use of relatively large size transistors within the feedback paths that maintain a desired level of hysteresis for high VCC values. However, the prior art disadvantages of such large transistors (limiting the margin between the high threshold voltage and VCC and also the margin between the low threshold voltage and ground) is obviated because the current-limiting nature of the diodes in the feedback path makes the relatively large transistor act "small" at low VCC values.

The Naura reference (USP 6,127,898) neither recognized this problem nor provides any solution. For example, the feedback paths in Figure 2, 3, and 5 are analogous to the prior art feedback paths of Applicant's Figure 1. As seen in Naura's Figure 2, a PMOS transistor T5 forms the feedback path for the low voltage threshold and an NMOS transistor T6 forms the feedback path for the high voltage threshold. Thus, T5 acts analogously to transistor P3 of Applicant's Figure 1. Similarly, T6 acts analogously to transistor N3 of Applicant's Figure 1.

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The sole difference is the control of the gate voltage for these transistors. Rather than couple the gates of transistors T5 and T6 to node S (analogously to Applicant's Figure 1) the gates couple to this node through circuits CP1 and CP2. But note that once transistors T5 and T6 are turned on, their currents will flow just as in Applicant's Figure 1: there is no current limiting mechanism through these transistors whatsoever.

The diode-connected transistor of Naura's Figure 4 simply serves to provide a reference voltage for circuit CP1. It does not serve in any fashion to limit the current through transistor T5 as the supply voltage is decreased.

The Rodriguez reference (USP 6,703,882) adds nothing further. This reference merely discloses an inverter – such devices have no hysteresis (and hence no feedback paths) and thus have nothing whatsoever to do with feedback paths in a Schmitt trigger. Setting aside the irrelevance of the Rodriguez reference, the diode-connected transistor 245 of Figure 2 is inserted (not in a feedback path) merely to raise the voltage of node 260 above ground. Col. 2, lines 14 – 39. Thus, Rodriguez provides no teaching or suggestion for the insertion of a diode into the feedback path of a Schmitt trigger to reduce the on-current as the supply voltage is dropped.

Accordingly claim 1 is patentable over the cited prior art. Because claims 2 through 11 depend either directly or indirectly upon claim 1, these claims are patentable over the cited prior art for at least the same reasons.

Claim 12 includes the acts of "changing a supply voltage for the Schmitt trigger; and in response to the changed supply voltage, affecting an on-current through the first feedback path using at least one diode such that the determined voltage threshold satisfies a predetermined threshold." As discussed analogously with respect to claim 1, the Naura reference neither suggests or teaches affecting the on-current through the feedback path in such a manner as recited in claim 12. Accordingly, claim 12 is also patentable over the cited

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prior art. Because claims 13 and 14 are dependent upon claim 12, these claims are patentable over the cited prior art for at least the same reasons.

Claim 15 includes the limitation of a "means for reducing an on-current through the first feedback path as a supply voltage for the Schmitt trigger is reduced." As discussed analogously with respect to claim 1, the Naura reference neither teaches or suggests any such means for reducing the on-current through the first feedback path. Accordingly, claim 15 and its dependent claims 16 – 20 are allowable over the cited prior art.

With regard to the drawing objections under 37 CFR 1.83(a) concerning claims 8 and 10, Applicant has provided a new drawing Figure 3B to show how diode-connected transistors N4 and N4 are included in the NMOS feedback path from VCC to transistor N3. No new matter is added because Applicant had described such a feature, for example, on page 6, lines 14 through 21. Thus, all the features of claims 8 and 10 are shown in the drawings.

Concerning the drawing rejection with regard to claim 7, Applicant notes that the feedback path that determines the high voltage threshold and the feedback path that determines the low voltage threshold are described on page 2, line 4 through page 3, line 2 of the application. In that regard, the N3 feedback path determines the high voltage threshold and the P3 feedback path determines the low voltage threshold. These same transistors are shown in Figures 3A and 3B. Thus, all the features of claim 7 are shown in the drawings.

The specification and drawings have also been amended to address some minor typographical errors.

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Accordingly, Applicants respectfully submit that claims 1 – 20 are in proper form for allowance. Reconsideration and withdrawal of the rejections are respectfully requested and a timely Notice of Allowance is solicited.

If there are any questions regarding any aspect of the application, please call the undersigned at (949) 752-7040.

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the Commissioner for Patents, Fax No. 703-872-9306 on the date stated below.

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Saundra Carr July 28, 2005

Respectfully submitted,

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